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ABSTRACT

Research and instructional role strains are identified, based on the use of large-scale mail surveys for college self-study that are used to teach introductory research methodology. The two organizational hierarchies, the research model and the instructional model, are examined. Experiences at Northwestern University, Northeastern Illinois University, and the University of Chicago illustrate how relationships are manipulated in response to different situational constraints. Critical resources identified for adequately gathering data are time, funding, and number and skills of students enrolled. The instructor acting as principal investigator must relinquish some control over the research process to both the university administration and student/staff. Accountability standards must be maintained or deviations explicitly noted concerning sampling, pretest, design of questionnaire, questionnaire distribution and return followups, and quality control of data processing. Measurement of research quality and instructional quality are examined. Recommendations are offered to reduce role strains and improve research and instructional relationships in subsequent experiential approaches to teaching survey research. (Author/SW)

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Experiential Approaches to Teaching Survey Research: Role Strains and Relationships*

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ABSTRACT

This paper identifies research and instructional role strains which emerge when a funded large-scale mail survey questionnaire study of their own campus is utilized to teach introductory research methodology students. All participants fill positions in two organizational hierarchies: (1) the research model consisting of the funding agency, principal investigator, staff, and survey respondent roles; and (2) the instructional model consisting of the university administration, instructor, classmate, and student body roles. Experiences at three universities in the Chicago metropolitan area--Northwestern University, Northeastern Illinois University, and the University of Chicago--are used to illustrate how relationships are manipulated in response to different situational constraints. Critical resources identified for adequately gathering the amount of data projected are time, funding, and number and skills of students enrolled. The instructor acting as principal investigator must relinquish some control over the research process to both the university administration and student/staff. Accountability standards must be maintained or deviations explicitly noted concerning sampling, pretest, design of questionnaire, questionnaire distribution and return, follow-ups, and quality control of data processing. Research quality is measured in terms of both standards for response rate and staff performance. Instructional quality is measured in terms of students' motivation and satisfaction as well as grades. Recommendations are offered to reduce role strains and improve research and instructional relationships in subsequent experiential approaches to teaching survey research.

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Introduction

Many students are attracted to the social sciences, humanities and education because of their concern with human behavior and social institutions. They possess interpersonal skills, a theoretical knowledge of social processes and a deep commitment to improving the quality of life through careers involving the study of human actors in social settings. Yet, at the end of their undergraduate or the beginning of their graduate education, they realize they have been taught to be students, consumers of theoretical, research and policy literature, and have not been trained to compile original data or to test the distillations of others. They know how to read about and critique the research of others, but not how to do it themselves. Students approach quantitative research methodology courses with feelings of anxiety, resignation, fear, and hostility. They know it is necessary to learn appropriate skills to further their academic and career interests. They feel apprehensive about the adequacy of their mathematical skills, the impersonality of the computer, and perceived lack of substantive content in research methodology courses.

Quantitative methodology courses are difficult for the novice researcher because they necessarily involve simultaneously learning and applying three different analytical languages: design and data collection procedures, statistical analysis, and computer processing. A pedagogical problem emerges in a selection of a particular research topic to which the techniques will be applied. Success or failure depends both upon mastery of research methodology and the substantive subject matter.

If a single topic is selected, students are immediately at a relative advantage or disadvantage dependent upon their prior course work and experience. Utilizing a variety of substantive topics does not represent a solution either.

If a series of topics are selected, each to represent a different methodological approach, then each project must necessarily be very limited (Wiseman and Aron 1970). If each student selects a different topic on the basis of individual interest, no coherent structure is possible. It is impossible to teach the variety of available research techniques at once, and not all topics are equally amenable to the same research procedures. This inherent structural problem of integrating substantive focus with an introduction to research methodology has meant that all too often: (1) regardless of whether students do well or poorly in the course they experience it as frustrating, boring and irrelevant to their interests in the "real world"; and (2) rather than performance measuring research aptitude alone, students have done well or poorly partially on the basis of their prior particularistic substantive experience.

A resolution of the dilemma is to standardize the prior substantive preparation of students enrolled in the course. Selecting a particular course as a prerequisite is inappropriate because it just shifts the problem of interest, motivation and success to another level without resolving the underlying problem. It is also unlikely that faculty could or would want to establish priorities among substantive areas. The one area of common experience which is shared is that of participation in the University community itself. As a large and complex institution, the range of specific research problems which can be investigated is diverse. At the same time each individual study is like a piece of mosaic adding to everyone's more limited personal understanding of the total picture.

Drawing upon class members' experience as participants in a particular university community, the salient issues for themselves as college students on a specific campus at a specific time can be defined and used to design a research project to study those issues for the entire campus. The responses of students to particular institutional structures can be systematically explored

as well as the more pervasive response to the status of college student within the larger society. Studies could be designed to teach the whole array of research methodologies employed by social scientists, both qualitative and quantitative. The basic logic of research design, data collection, and analysis is the same, although more explicit in highly structured quantitative approaches. Therefore, in this paper, we have limited our discussion to the single methodology of the mail survey research questionnaire.

Involving students as staff in a single mail survey research project is analogous to conducting a large-scale grant. Funding must be obtained beyond the usual allocations for college classes. Questionnaires must be typed and duplicated, mailing envelopes purchased, and postage affixed. Classmates must work together to meet common deadlines; an individual student's failure to complete assignments jeapordizes the success of the project for everyone. Standards of accountability are shared; a first-rate project demands "A" quality work from everyone. Performance evaluation rests not only with the instructor; the funding source and the survey respondents have a vested interest in the content, quality, and results of the project.

Involving students as staff in a single mail survey research project is also qualitatively different than conducting a large-scale grant. Source of funding is not from an outside agency but from within the university's own administration. The administration then has input on two levels, concerns about students' welfare and concerns about research content. Students pay tuition for classroom instruction; they are not hired hands. Students do not have the training and qualifications usually required by staff job descriptions; they are taking college courses to acquire that training. A range of grades is permissible for students; they can continue to participate in a class even though their work is

of "C", "D" or even "F" quality. They cannot be fired or replaced for inadequate task performance. Finally, the success of a research project is evaluated by the quality of a single product, whereas successful classroom learning is evaluated by individuals' accomplishments measured against a criteria of excellence.

When the role requirements for research and teaching are applied simultaneously, the relationships subsumed by each are compromised. All participants fill positions in two organizational hierarchies: (1) the research model consisting of the funding agency, principal investigator, staff, and survey respondent roles; and (2) the instructional model consisting of the university administration, instructor, classmate, and student body roles (see Figure 1).

Figure 1 about here

The parallel positions have overlapping but different role expectations. Role conflicts and compromises in relationships can be anticipated although not avoided. As principal investigator the instructor has the option of deciding the amount and type of responsibility to be delegated to the students working on the project. The instructor defines the course syllabus and the grading criteria. The nature of the role strains and relationships engendered can be manipulated to produce the best research project possible and to maximize students' experiential learning if the situational constraints are known or can be anticipated in advance. This paper identifies research and instructional role strains when utilizing a funded large-scale mail survey questionnaire project to teach introductory research methodology students. Experiences at

three universities in the Chicago metropolitan area are used to illustrate how relationships are manipulated in response to different situational constraints.

Research and Experiential Learning

The amount of responsibility delegated, and to whom, depends upon whether the goals of research or the goals of experiential learning are given primacy. Research is usually undertaken when a topic is identified as worthy of explanation. To be considered worthy of explanation, a topic usually relates to previous research, general theoretical models, and/or the identification or solution of some social problem. Developing a new college-level course, or teaching a traditional course in an innovative way, is considered a curriculum design problem, not a research problem.

Mail survey questionnaire studies at Northwestern University, Northeastern Illinois University and the University of Chicago were undertaken simultaneously to accomplish both standard research and curriculum design purposes. Students enrolled in upper-division undergraduate introductory research methodology courses were to be taught research skills by collecting data on their respective universities. The relative emphasis given the two purposes, research and instruction, differed among the campuses. Both the Northwestern University and the Northeastern Illinois University studies were primarily concerned with changes in curriculum to replace traditional textbook approaches with experiential learning. The study at the University of Chicago was primarily undertaken for a traditional policy research purpose, to inform administrative decision-making (see Figure 2).

Figure 2 about here

Chronologically the Northwestern University survey was the first to be conducted, during the 1976-77 academic year, with the Northeastern and Chicago studies following in that order, both conducted during the 1978-79 academic year. The Northwestern survey was initiated by Suelzle to improve the quality of teaching undergraduate research methodology courses by increasing the relevance of the data set. The omnibus survey of student life was to serve as an exercise in data collection for the one group of students who collected the data, and as a data set for secondary analysis for subsequent groups of students enrolled in the same class.

The Northeastern Illinois University survey was designed by Singleton to meet the requirement of a major project for an individualized undergraduate major. As a re-entry part-time student, with a full-time staff appointment and several years administrative experience in the School of Business at Northeastern, Singleton took advantage of inter-university cooperative arrangements to have Suelzle serve as her off-campus adviser. The project as originally proposed was to have been a replication of the Northwestern study. However, Northeastern is a commuter school whereas Northwestern is primarily a residential campus for undergraduate students. Because many of the university-related experiences of commuter school students differ from those of residential school students, some sections of the Northwestern survey questionnaire were deleted and some new sections added.

The idea for the University of Chicago survey originated with the Director of the National Opinion Research Center (NORC), and the Head of the Public Affairs Program for undergraduates. From their experience on University committees, they raised the policy-oriented research question of how effective policy could be made without a firm knowledge of the dimensions of undergraduate life.

Generating a data base seemed ideal for integrating NORC activities more with University activities, and furthering the teaching of survey research to students who were studying policy research. Rosenfeld was approached to implement the idea in her capacity as a Senior Study Director at NORC.

Adequacy of Resources

The amount of responsibility delegated, and to whom, depends upon the resources available to the project initiator. Traditionally a research proposal must demonstrate that resources are adequate for gathering the amount of data projected. Critical resources are the amount of time available for gathering the data, funding to cover project costs and the number and skills of staff needed to stay within the time available and finances budgeted. Seldom are resources adequate enough to conduct an ideal project. Compromises must be made and corners cut. Professional discretion is necessary to ensure these cost-saving measures impact as little as possible on the final product. This was the case at all three universities. All three principal investigators resolved time constraints and staff's limited skills by delegating less clerical and technical tasks than would ordinarily be the case. They worked very long hours! Obviously if time was too limited or staff's skills too inadequate projects could not be completed successfully. Funding presents similar constraints. Out-of-pocket expenses can be reduced by doing the work oneself rather than hiring technical staff, but it may be impossible to "appropriate" supplies and postage stamps outside of project funds.

1. Adequacy of time estimates projected. All three projects were projected to require two quarters (Northwestern University and University of Chicago) or two trimesters (Northeastern Illinois University). All three en-

countered unanticipated delays. At Northwestern, funding was not obtained until late in the first of the two quarters. At Chicago, administrative approval to obtain population sampling lists was not obtained until late in the first quarter. At Northeastern, there were a whole series of minor delays which added up to a considerable amount of time lost.

2. Adequacy of funding. To a certain extent the staff labor provided by students and instructors can reduce cash outlay enormously, but basic monetary outlays for supplies, printing and duplicating, and postage remain to be met. None of the projects included salaries for the principal investigators nor computing funds in their budgets. These and other hidden costs make it difficult to determine the actual full-costed budgets. Although they could be estimated with a relatively high degree of accuracy, the value of doing so is dubious. Presumably these imputed costs would also be borne at other universities which encouraged similar studies. What is relevant for actually implementing a study is obtaining the funding for the out-of-pocket costs remaining. The amount of funding required can vary widely, depending upon whether the additional amounts are absorbed as administrative expenses or provided through student-staff labor. The out-of-pocket costs for the three studies demonstrate this variability (see Table 1).

Table 1 about here

If only the grand totals, indicating the actual dollar amounts awarded for the three projects, were considered, then it would appear the Northwestern and Chicago surveys were in a luxury class compared to the budget-basement Northeastern Illinois survey. Closer examination of the common expenses versus the unique expenses incurred by each of the surveys reveals that more of the expenses for

salaries were hidden costs for the Northeastern Illinois survey. The principal investigator for the Northeastern Illinois survey, Singleton, typed the questionnaire herself obviating the need for budgeting a typist's salary as an out-of-pocket expense. Keypunching was done by Northeastern Illinois University Computing Services, without a separate billing, as part of the support service routinely provided to faculty and staff. Coding was carried out by the student staff members with Singleton taking the role of coding supervisor, and Singleton also created the computer data file.

At Northwestern and Chicago, more of these responsibilities were contracted and billed. Data processing at Northwestern was shared by the student staff members, the principal investigator, and an undergraduate research assistant. The research assistant worked half-time during the design and data collection phases for a six-month period, and three-quarters time for eight weeks during the summer on preparation and cleaning of the data file. The principal investigator and the research assistant acted as the coding supervisors, for those questionnaires returned early enough to be coded and keypunched by the student staff members, i.e., before the end of the school term in which the course was offered. Much of the coding and keypunching was conducted by the research assistant. At Chicago a coding supervisor and keypunching services were hired through NORC, with questionnaires returned early enough coded by student staff members. A research assistant was also hired for the data file preparation. In summary, the Northeastern Illinois principal investigator did do more of the labor involved herself, but also the project was not billed for the division of labor that was utilized.

Examination of the common expenses also reveals a wide range in out-of-pocket costs. The Northeastern Illinois survey retains its status as the bargain-basement model ($544), Northwestern falls in the middle-price range

at approximately 50 percent above the Northeastern survey ($778), and Chicago stands in the luxury class at 150 percent above the Northeastern survey ($1254). These dollar amounts are translated into decisions concerning both sample size and questionnaire length. Those factors affect the number of copies of the questionnaire to be duplicated and the amount of postage which can be expended for mailing the survey packets to the respondents. Sample size was largest for the Chicago survey with 759 potential respondents included, smaller for Northeastern Illinois with 570, and smallest for Northwestern with 525. The Northwestern questionnaire was the longest at 40 pages, shorter for Chicago at 37 pages, and shortest for Northeastern Illinois at 32 pages. Postage costs reflect the additional consideration of how the survey packets will be handled. At Northwestern packets were mailed first class only to those students living off campus (about 30 percent of the undergraduate student body), and hand-delivered by the student staff members to the residential units of those living on campus. Postage was also placed on only the return envelopes of off-campus students. Thus, no out-of-pocket expenses were incurred for postage to respondents living on campus. At Northeastern Illinois, a commuter campus with no student residences, sending the packets third-class to all students reduced overall costs; requesting students return surveys to campus drop boxes obviated the need for return postage. At Chicago, all packets were mailed first-class, and first-class postage placed on the return envelopes.

Beyond the pragmatic implication that costs are affected by the quantity of data sought, variability in the budgets also reflects differences in the quality of the data collection procedures. At Northeastern Illinois follow-up questionnaires were not mailed to nonrespondents whereas at Northwestern and

Chicago they were. Here again higher costs were incurred at Chicago where first-class postage was required for follow-ups to all nonrespondents, whereas at Northwestern postage was only required for nonrespondents living off campus.

In summary, if salaries are excluded, the out-of-pocket cost for supplies (duplicating, supplies, postage) per sampled case for the three studies was:

Northwestern . . . . . $778 ÷ 525 cases = $1.48/case

Northeastern Illinois. . $544 ÷ 570 cases = $0.95/case

Chicago . . . . . $1254 ÷ 759 cases = $1.65/case

3. Staff skills and training. All three of the surveys encountered unanticipated delays in scheduling due to factors beyond the control of the principal investigators although the specific factors varied between the campuses.

Northwestern is on the quarter system with three regularly scheduled instructional sessions of 10 weeks each within a regular academic year. The introductory research methodology course is a two-quarter sequence, traditionally offered in the Fall and Winter quarters. Since the University's fiscal year ends in August, funding from the university for a current fiscal year cannot be approved any earlier than September when budget allocations are known. The letter of intent had been developed into a proposal submitted to the University Research Committee for their first meeting in October. Since the Fall quarter began prior to that date, students began working on a traditional syllabus with a series of assignments designed to teach research methods through the secondary analysis of survey research data. Students were informed that a proposal had been submitted which would give them an opportunity to conduct a survey at Northwestern. They were also informed that if funding was granted, work on a Northwestern study would be substituted for the traditional course outline and assignments. Due to a heavy workload at the beginning of a new fiscal year,

the University Research Committee did not consider the proposal at their first meeting. It was considered favorably at their second meeting a month later, but by the time the letter of award went out in November, the class was in the eighth week of a 10-week quarter with assignments and projects nearing completion. A decision was made to postpone work on the Northwestern study until the beginning of the Winter quarter and to undertake an accelerated schedule for questionnaire design and data collection. The twenty-one students electing the option of continuing for the Winter quarter did know they would be staff members working on their own survey and they did have an opportunity to think about defining their interests a few weeks ahead of the start-up date.

Chicago is on a quarter system with three regularly scheduled instructional sessions of 10 weeks each within a regular academic year. The research practicum is a two-quarter sequence, offered in the Winter and Spring quarters. All fifteen of the students were supposed to have had a statistics course, but almost half did not. During the Winter quarter, after students decided to participate in the joint project they were to have begun interviewing members of various interest groups in the University community. Delay in obtaining administrative approval for the project meant interviewing could not be begun until the sixth week of the quarter. In the interim the student staff members reviewed previous studies, informally began talking to other students about problems which might lead to withdrawal from the College, and were introduced to methodological issues of conducting survey research (sample size, operationalization of variables, reliability and validity). Design of the questionnaire was compressed into the final two weeks of the quarter when the scheduling of extra sessions was difficult. Much of the editing work was left for the principal investigator to accomplish over the 10-day break between quarters. More delays were encountered at the beginning of the Spring quarter obtaining administrative approval of the final

questionnarie format.

At Northeastern Illinois, students enrolled in introductory research methodology courses became the staff brought on board for the development of the final questionnaire and the data collection. During the Fall trimester, Singleton contacted the Sociology faculty member teaching two introductory research methods courses (one during the day and one in the evening division). Singleton obtained permission to make a presentation to the students, and the professor gave students the option of working on the project as part of course requirements (14 out of 54 students indicated an interest in joining the project). During the Fall trimester the questionnaire was designed and pretested and Singleton made preliminary arrangements for services and assistance that would be needed to conduct the survey. There were several students who had originally indicated that they intended to work on the project who subsequently decided against doing so, a student who indicated an interest but was not attending class, a student who was ambivalent and wanted to "see what it was all about" before making a commitment, and a student who expressed interest at the last minute. Changes in project membership were permitted and the principal investigator felt it was a judicious decision. Those who remained as project members and those who joined after being introduced to activities, a total of nine students, indicated a high level of interest and participated enthusiastically and conscientiously. It was felt that a "hired hand mentality" would have been fostered if those who had originally expressed interest had been compelled to continue despite changing their minds (although it should be noted that this mentality did not seem to develop at Northwestern or Chicago where all of the students in the courses were involved in the projects). Students who wanted to remain involved for the data collection phase of the survey during the

Winter trimester were sponsored for independent study credit by the same Sociology faculty member.

Although the advanced planning of the Fall trimester was extremely valuable, the need for flexibility (in terms of attitude as well as implementable procedures) was recognized as soon as the Winter term began. Severe winter weather (Chicago's blizzard of '79) delayed project activities. Northeastern Illinois University was completely closed several times early in the trimester. When it was open, getting to and from campus was difficult at best and at times impossible. School closings caused a delay in the change of registration period (a delay in obtaining a list of enrolled students), a backlog of work in duplicating services where questionnaire booklets were to be printed, and difficulties in arranging common meeting times for project members. Meeting times for the project course were not specified during advanced registration held midway in the Fall term, and the students who were to become project members had arranged the rest of their academic and employment schedules without reserving specific times for the project course. Printing presses broke down. Promised supplies were not available on time. Postal service information was inaccurate. Project members experienced transportation difficulties, illness, personal problems, and employment conflicts, which at times interfered with their completing assignments.

In summary, all three projects were completed, although not within the original times scheduled. All three principal investigators assumed the responsibility for cleaning-up data collection in the field and quality control of data processing after the research methods courses had ended.

Funding was adequate at Northwestern and Chicago for the mail distribution and return of completed questionnaires. It was not adequate at Northeastern.

The delays in start-ups provided time to initiate students into the survey research process and their staff responsibilities. Students on all three campuses were motivated to learn and fulfilled the staff demands made of them. All three principal investigators had to exercise discretion concerning the demands which were made.

At all three universities, the goal of the undertakings was a research paper, not just a data set. Schedules and assignments had to be adjusted due to delays such that even the data sets were not prepared within the time periods available. At Northwestern the problem was overcome by permitting interested students to register for independent study credit for the Spring quarter, a third quarter with the continuity that beginning the project in the Fall provided.

Locus of Control

Traditionally, the locus of control over the research process remains with the principal investigator. The principal investigator's peers are the reference group and professional codes of ethics are the reference standards. University administration retains overall budget control and staff's input is limited to the technical requirements of their jobs. When research and instructional hierarchies are fused rather than separate channels of accountability, role relationships are substantially altered.

1. Principal investigator accountability to peer review. Whenever outside funding for a project is sought, it is fairly routine for the principal investigator to enter into a process of negotiation with the sponsoring agency. A process of negotiation did occur for all three surveys reflecting concerns about the applied versus basic nature of the projects as well as concerns about admin-

istrative procedures. The unique nature of the negotiations at each of the campuses affected both questionnaire content and the data collection procedures.

At Northwestern funding was sought and granted from the University's Research Committee. The Committee was constituted to serve as a medium to initiate research efforts of the faculty, to serve as a mechanism to bridge problems when they arise in the research programs of faculty, and to serve as a medium to help to disseminate the results of scholarly activities of faculty. The proposal for an Undergraduate Life Survey came under the first of these three purposes. Implicit in that purpose is the assumption that the funding will be granted to foster basic research interests of faculty. A letter of intent, submitted to the Committee as a preliminary step to the development of a proposal, presented a rather detailed rationale for the benefits to be derived for the teaching of undergraduate research methods. This rationale was eliminated from the actual proposal because informed colleagues suggested it leaned too much towards applied research instructional interests. The proposal stressed the basic research benefits to be derived from conducting a case study of a single university.

The general rationale offered was that of using the data to conduct a basic research study of the effects of particular University institutional structures on life-course outcomes. Although various administrative offices at Northwestern had undertaken studies of students over the years, and although a number of reports had been issued suggesting innovations which would make institutional structures at Northwestern more responsive to the needs of undergraduate students, there was a paucity of systematic information on the responses of students to institutional structures. Faculty, students, and administrators alike operate with folk wisdom regarding "student culture" and the

"problems of Northwestern," and decisions about resource allocation were often based on this type of unsystematic information.

Once the proposal was modified to reflect basic research rather than instructional concerns, the Northwestern project was handled in an identical fashion to any other faculty basic research undertaking. A Human Subjects Review Form was submitted to the Institutional Review Board for clearance. No consent form was deemed necessary based upon procedures guaranteeing confidentiality and anonymity and lack of risk to respondents. Items to be included in the questionnaire were submitted with the Human Subjects Review Form and included some which might be considered "sensitive", for example items relating to alcohol and drug use, race relations (attitudes and behavior), and sexual behavior. Since the items were similar to those included in other basic research projects investigating such issues, their inclusion for the Northwestern sample was never questioned. Faculty and administrators who have been involved in tapping student opinion over the years at Northwestern expressed an interest in the survey and offered some suggestions during the stage of questionnaire construction. There were a couple of requests for marginals on particular questions (primarily those regarding student satisfaction) from faculty members on University Committees since the data was collected, and other faculty members in Sociology and Education have used the data base for teaching research methodology courses.

At Northeastern Illinois out-of-pocket financial support was received from the administration. Hidden costs were borne by offices and departments able to provide technical advice and services such as duplicating, data base access, and data processing. Administrators (the Dean of Arts and Sciences, Provost) and faculty informally expressed interest in the project throughout its course and were generally willing to provide assistance whenever possible. A notable exception was the denial of permission to contact nonrespondents by telephone

as part of a follow-up procedure, on the grounds that to do so would constitute an invasion of privacy. Administrative and faculty response to the project was totally favorable. For example, the University's Self-study Committee (preparing for an accreditation visit) extended an invitation to the principal investigator to review research activities and to discuss possible ways in which data could be utilized by the committee. Implications of the data collected were suggested in the 1979 Report of the Dean of Arts and Sciences. Personnel from Institutional Studies expressed interest in comparing data gathered by their office with that collected through the project. Responses to open-ended questions regarding the experiences of returning students were shared with Community Services' Committee on Programs for Returning Adult Students. The Chairperson of the Task Force on the Basic Program inquired if there was any information that the project could provide that would be useful in the committee's deliberations.

Northeastern Illinois faculty and administrators were interested in investigating student satisfaction and/or lack of satisfaction with the institution and student perception of the school's goals and objectives. Sections of the Northeastern questionnaire dealing with those topics were expanded to respond to sponsor interests. A major modification in the overall research design was the expansion of the single-phased survey of undergraduate students at Northwestern to a multi-phased survey directed at the following populations at Northeastern: undergraduate students, campus clubs and organizations, and readers of the campus newspaper. The project originally dubbed "Survey of Undergraduate Students," became known to the Northeastern Illinois University community as "SURVEY '79."

On her own initiative, Singleton did delete sections of the Northwestern survey when designing the replication. Examining the sections which were entirely eliminated illustrates the type of decisions implemented:

1. Living units. Since Northeastern Illinois is a commuter school the section concerning living units was not applicable.

2. Race relations. At Northwestern the greater part of the student body is composed of two racial groups: blacks (8.7%) and whites (87%), and student/staff were interested in investigating the tension which exists between the two groups. Although there were a substantial number of black students at Northeastern Illinois (12%), other racial-ethnic categories are also significantly represented in the study body (American Indian, Asian, Hispanic, Non-resident alient students = 15%). Singleton did not perceive there to be a clear-cut "bilineation" of the student body nor that any tension that may have existed between various ethnic or racial groups seemed to affect campus life.

3. Social life and organizations. The section was deleted both because the specific references were campus specific and also because there did not seem to be a campus equivalent at Northeastern Illinois to Northwestern's campus social life or patterned social activities in Chicago. As a collectivity it did not seem to Singleton that Northeastern students had a common "watering hole" with which everyone is familiar even if not a regular patron. Most Northeastern Illinois students are residents of Chicago though from a wide variety of neighborhoods within the city limits. The concept of "going to Chicago," aside from the obvious inapplicability, would probably not suggest a generally familiar social passtime. Furthermore, the Northwestern social life and organizations section was directed toward single students of typical college age (18-22 years). The average of Northeastern Illinois students was 26; many were married and parents. Consideration of the many and varied social lives represented by Northeastern Illinois students suggested that revising this section would require a major overhaul and more space in the questionnaire than was available.

4. Sexual preferences. The section dealing with sexual preferences and habits was deleted primarily because Singleton felt uncomfortable with its explicit inquiries.

5. Religious involvement. Items asking the respondents for their own, spouses' and parents' religious preferences were retained. Religious interest and involvement in traditional organizations, fundamentalist movements, and Eastern mysticism were topics of greater interest at Northwestern and thus were deleted.

At Chicago the idea for the survey originated with NORC and the Public Affairs Program with Rosenfeld agreeing to become Principal Investigator while teaching the Public Affairs Research Practicum course. The idea was presented to the students in the class by the Head of the Program. Both Rosenfeld and the students were under the impression that not only had administrative approval been granted for the study but also that certain administrators were vitally interested in having the issue of student attrition tapped by the survey. It turned out that not all relevant administrators had been contacted and that obtaining lists of enrolled and withdrawn students for sampling purposes was problematic. Concerns were raised about problems in letting students survey their peers (confidentiality), about using students as subjects (the ethics of surveying a captive audience and the necessity of the administration monitoring the number of surveys conducted to prevent overloading students), about the reliability and validity of the results (distrust of results from survey research essentially challenging the competence of NORC), and fear of the uses to which the results would be put (that interpretations would be incomplete or not take into account the constraints under which the University works). There was a delay of six weeks while the principal

investigator negotiated with the Deans of the College and University before cooperation was gained. Cooperation was contingent upon the stipulation that the administration have an opportunity to review the questionnaire before it was administered. Also, student staff members were not permitted to see the names of the students included in the sample, which precluded telephone follow-ups of nonrespondents. A consent form was required.

In summary, it did make a difference that the Northwestern study was funded by a university research committee whereas the other two studies were funded directly by the academic administration. The Northwestern study was approved to initiate the basic research interests of an individual faculty member. No self-interested control was exerted over the content of the questionnaire or the data collection procedures. Interested faculty and administrators provided input and obtained information on results but more so in their capacity as research-oriented professionals than in terms of their positions within the university hierarchy. The only standards invoked were those concerning the conduct of ethical research, such as concerns for maintaining confidentiality and anonymity. At Northwestern, students to be sampled were treated as "human subjects," not as students per se. The Northeastern Illinois and Chicago surveys were viewed as serving the dual purposes of the basic research interests of the principal investigators and the applied research interests of the administration. Additional constraints were imposed consistent with administrative concerns about the students to be sampled as students per se, individuals whose educational needs were their responsibility, and concerns about the image of their universities. Questions which could potentially be interpreted as sensitive by students or others were not included. Telephone contacts by student/staff members as part of follow-up procedures were not

permitted. Administrative concerns took precedence over basic research concerns for quality of data (scope of inquiry and response rate).

In summary, Suelzle's proposal was submitted to Northwestern's Human Subjects' Review Committee as any other externally funded research project would be. The fact that the study was to be conducted on the Northwestern University campus was irrelevant. The Human Subjects' Review Committee decided that a consent form was not necessary because there was no substantial risk to the subjects. At the University of Chicago, the administration decided that a consent form was necessary because students should not feel coerced to participate since the administration was sponsoring the project. The administration decided that it was not necessary for a proposal to be submitted to the Human Subjects' Review Committee. At Chicago the project was treated as an in-house evaluation. At Northeastern Illinois, the project was treated by the administration as a student exercise. Neither a consent form nor the Human Subjects' Review procedure were required

2. Principal investigator/staff division of labor. All three principal investigators retained control over the research process. The search for funding involves writing a research proposal and seeking administrative cooperation. In all three studies the development of the proposal was undertaken without participation of students in the process. The authors acted in the role of "principal investigator" for their respective studies.

The amount of control exerted by each of the authors over the specificity of the research topic depended upon how she perceived her role vis-à-vis the sponsors/administration and the students/staff members. Each provided a framework out of necessity since the proposals were developed and funding obtained before the students were engaged as staff members. In terms of a

range from the omnibus survey to the topic-specific survey, the Northwestern study was the most comprehensive, the Chicago study the most focussed, and the Northeastern Illinois study intermediate between the two.

Suelzle conceived her role as principal investigator as one of facilitator and consultant (reflecting her strong commitment to instructional concerns). Her proposal to the Northwestern University Research Committee was itself a revised version of an original letter of intent. The original letter of intent stressed the value of experiential education via introductory research methods classes; the proposal placed more stress upon basic research concerns as a pragmatic consideration for obtaining funding. Even then the basic research concerns were stated in as broad and general a manner as possible in order to permit student staff members the greatest possible latitude in truly designing the questionniare. The only commitment made in the proposal concerning the substantive content of the questionnaire was that it would pay "attention to the particular institutional features of Northwestern" and that it "would cover at least the following four major areas: (1) quality of student life, i.e., involvement in academic and social institutional structures; (2) career aspirations; (3) family expectations; and (4) personal values of students." The only restriction placed on student staff members subsequently was that the items they developed and submitted could be included under one of these four headings. For practical purposes, at least some student/staff had to be defining their interests as falling under each of the headings. Student/staff did self-select themselves into working groups encompassing all four areas obviating the need for the principal investigator to assign any of the content area to be developed. There were no restrictions on the content of any questionnaire items. Suelzle's role was that of "helping" the student/staff.

Rosenfeld initially conceived her role as that of a professional staff member appointed as principal investigator to carry out the mandate from NORC and the Public Affairs Program to integrate NORC activities with University of Chicago activities by furthering the teaching of survey research. Working on the suggestion of the Head of the Public Affairs Program, Rosenfeld and the student/staff members decided to focus on reasons for withdrawing from the University of Chicago, using currently enrolled students as a comparison for students who had withdrawn. After open-ended interviews were conducted with student leaders and administrators, it was decided to widen the focus to a more general study of "satisfaction" with the University on various dimensions. The research team was somewhat restricted in the types of activities and attitudes which could be investigated because of the sensitivity the administration felt was involved (i.e., questions on potentially sensitive issues such as sexuality were not to be included). Rosenfeld's role was that of "helping" the student/staff and the administration.

Singleton's role was primarily that of recruiting students to "help" her since she was developing her own honors project and not simultaneously involved in teaching an undergraduate research methods course. Initially her intent was that of conducting a replication of the Northwestern study at Northeastern Illinois. Budgetary considerations necessitated reducing the length of the questionnaire; substantive considerations necessitated increasing the relevance of the questionnaire to Northeastern Illinois students (i.e., to commuter students rather than students at a residential campus); administrative considerations necessitated including questionnaire items of specific interest to the funding sponsors of the project. Reducing the length of the survey instrument was accomplished by completely eliminating several sections of the Northwestern questionnaire and by generally decreasing the number of items in other sections.

These decisions were made unilaterally by Singleton.

The amount of control exerted by each of the authors over the development and selection of questionnaire items varied, as had focussing the research topic, according to how each perceived her role. Student/staff members were given the most autonomy at Northwestern, least at Northeastern Illinois, with those at Chicago being intermediate. At Northwestern the major concern was that the survey be undertaken by the student/staff as "their" project; at Northeastern Illinois that the survey was the "real thing", not just another classroom project; and at Chicago that the data obtained be "good enough." In all three studies, the authors retained the prerogative of rejecting items based on technical inadequacy (biased wording, lack of clarity, redundancy, response categories not mutually exclusive and exhaustive).

At Northwestern the twenty-one student/staff members enrolled for the Winter quarter were all continuing from the Fall quarter in which they had conducted secondary analyses of a Berkeley Social Attitude Survey using SPSS (Kelley and Suelzle 1970). They all knew they would be designing and conducting a survey of Northwestern Undergraduate Life and had all received copies of the funded proposal at the end of the Fall quarter. A number of other reference documents were placed on reserve:

--Northwestern administrative reports and proposals concerning undergraduate education, including affirmative action documents;

--questionnaires from Educational Testing Service, a survey of freshmen conducted by Northwestern's Department of Planning, a survey of sophomores conducted by Northwestern's Student Guidance and Counseling, a survey of premed's conducted by Northwestern's Office of Admissions, two surveys of students conducted by the Department of Sociology at Trinity College; and a conceptual item pool created from the foregoing;

--qualitative research papers based upon original data collected by ten students in the course during the previous academic year;
--Four major published item pools: Bonjean et al's Inventory of Scales and Indices (1967), Robinson et al's Measures of Political Attitudes (1968), and Measures of Social Psychological Attitudes (1969), and Shaw and Wright's Scales for the Measurement of Attitudes (1967).

Within the four major areas defined in the Northwestern research proposal, smaller subgroups of one to three student/staff members were formed on the basis of self-defined interests to develop questionnaire items within narrower topic areas. For example, the major area "quality of student life" was subdivided into five subareas: academic characteristics, quality of campus life, social life and organization, living arrangements, and race relations. In actual practice each student/staff member worked with one or two other persons. Where only one student was interested in a subarea, then that student was paired with another working on a closely related subarea. For example, the one student interested in "quality of campus life" worked with the one student interested in "living arrangements". No more than three students selected any one particular subarea. During the third week of the quarter students in each of the four major areas typed up their questions on spirit masters, duplicated them, and handed them out to the other students. Four class sessions (two weeks) were devoted to having the students fill out all the questionnaire segments and offer a critique based on this pseudo-pretest. Questionnaire segments were returned to each group or individual so that they could list the references for each question included--(1) original, (2) derived from a book, journal article, magazine, or previous unpublished questionnaire, or (3) derived from the Berkeley survey. The desireability of replication was repeatedly stressed, and students repeatedly reminded to

keep track of the source of items from other surveys and published materials. In fact the latter was rather poorly done and tracing the source of items would be quite difficult. Suelzle took the responsibility for noting replications of items from the Berkely study in the Northwestern codebook (a tedious and time-consuming task). Other than those items from the Berkeley study it would be difficult to estimate how many items were replications and how many were newly created.

At Chicago, the open-ended interviews conducted with university special interest groups (student leaders and administrators) were written up and circulated to the whole class to provide a starting point for the development of questionnaire items. Various other surveys were also used as reference documents, including previous surveys of the University of Chicago and Dartmouth, the Northwestern and the Northeastern Illinois student surveys, and NORC's General Social Surveys with which some of the students had worked in a previous statistics course. Items were modified as necessary. Although the desireability of replication was repeatedly stressed, student staff generally preferred to change things which seemed less than ideal to them. As was the case at Northwestern, it was also difficult to get the student/staff to keep track of the source of items. In general it seems difficult to communicate that using published questionnaire items without an appropriate citation is no different than any other form of plagiarism--perhaps it is because survey research questionnaires frequently do not bear an "author's" name that they seem to students to be free for the taking without citation.

Student/staff who opted to work at Northeastern Illinois as part of their research methodology course requirements were provided an opportunity to offer suggestions and additional/alternative questionnaire items to Singleton.

Few students did make suggestions and those few who did in turn offered few suggestions. They had not participated in a prior planning or negotiation process concerning the survey and were more or less presented with a fait accompli in terms of the Northwestern questionnaire as a model. Nonetheless, modifications which were suggested were taken seriously and did increase the relevance of the survey to Northeastern Illinois students. For example, at Northwestern respondents were asked, "What year of school are you in? (Freshman, sophomore, junior, senior)." Since many Northeastern Illinois students take courses on a part-time basis, and are not always able to attend consecutive trimesters because of employment obligations, family responsibilities or lack of financial resources, they tend to think in terms of hours completed toward graduation rather than in terms of school year or class. The question was revised to allow students to respond in a manner more familiar to them, "How many hours do you have toward graduation? (_____hours)." This format permitted the responses to be recoded to indicate categories comparable to those used in the Northwestern questionnaire. Since Singleton took the responsibility for the deletion, revision, and addition of questionnaire items, a detailed record of the source of items was maintained. Of the 578 substantive variables on the final questionnaire, 203 items were exact replications from the Northwestern survey (which represented 35% of the Northeastern Illinois survey instument), and another 58 Northwestern items were used though their format or wording were altered (which represented another 10% of the Northeastern Illinois questionnaire).

Accountability Standards

Traditionally, a research project goes through a series of obligatory stages: sample selection, pretest, design of questionnaire, questionnaire

distribution and return, mail and personal follow-up and quality control of data processing. The requirements for these stages were maintained or compromised dependent upon purpose of the project, adequacy of resources and locus of control (see Figure 3).

Figure 3 about here

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1. Sampling. All three studies utilized a systematic (interval) sampling procedure following a random start, with sample size being primarily determined by budgetary constraints. At Northeastern Illinois the sampling population consisted of all currently enrolled students, at Northwestern the sampling population was stratified into black and nonblack students, and at Chicago the sampling population was stratified into currently registered and withdrawn students.

At Northwestern sample size was derived as a function of cost and number of student/staff members in the research methods class. Funds were available for approximately 500 mailed questionnaires; assigning each of the 21 students responsibility for 25 surveys resulted in the final sample size of 525. The six black students in the class took the responsibility for the black subsample; the remaining 15 students took the responsibility for the nonblack subsample. The sample was thus stratified to include 150 black students from the 635 registered, and 375 from the remaining 6005 students. A computerized listing of currently enrolled students, stratified by racial background was obtained from the Registrar's office with the stipulation that the list be destroyed once the sample was drawn. The computerized list was divided equally within the two subsamples among students in the class. Class members' birthdates were utilized to select the first name from their computer list segment.

Thereafter, every 4th name was selected for inclusion in the black subsample and every 16th name for inclusion in the nonblack subsample until each student/staff member had a list of 25 names.

At Northeastern Illinois a sample size of 570 respondents was determined primarily by financial resources. Six hundred questionnaires could be printed and mailed. However, a total of 30 questionnaires were retained for codebooks, project records, and the possibility that some students might request a replacement for lost questionnaires. A population retrieval was run by the Registration Office several weeks after the beginning of the Winter term when enrollment had stabilized, i.e., after late registration and change of registration. To ensure that students would have had at least one trimester of experience at the school, undergraduate students were selected who received grades for the previous term (Fall trimester) and who were currently enrolled. A total of 5,722 students were selected and listed with the computerized printouts divided among 10 student/staff members. The first name selected within the first 10 names on each printout list segment was selected for inclusion until a total of 570 names were selected. The sample was drawn by project members during class time, with the entire procedure taking about 30 minutes.

At Chicago, all students who had withdrawn from the College and who had not returned (withdrawal meaning anything from a term abroad, a leave of absence, to dropping out) were mailed a questionnaire by the Dean of Students, but in a NORC envelope. Withdrawn students had been sent a letter previously by the Dean asking if they would object to participating. Very few replied that they did. The on-campus sample was an interval sample, every 5th person after a random start, from the registrar's printout of address labels for all registered undergraduates during the Spring quarter. Sample size was 509 for students on

campus, and 250 for those who had withdrawn.

2. Pretest. Due to the lateness of the funding award at Northwestern, necessitating that questionnaire design and data collection be conducted in a single 10-week quarter, no pretest was conducted. Student/staff did fill out each other's questionnaire segments and critique them based upon their ability to answer. Even eliminating those questions with technical difficulties (ambiguous wording, double barreled content), the number of useable items remained far too high to be incorporated into a single questionnaire, perhaps double the number actually included. The class worked together to come to a consensus regarding the number of pages allocated for each of the questionnaire subareas, invoking a two-factor decision-making model: the number of students who had developed questionnaire items for a subarea, and the perceived importance of the subarea for undergraduate life at Northwestern. The individuals who developed the items were given the responsibility for making the cuts which would bring the number of items submitted within the pages allocated. Suelzle and her research assistant then made further cuts uniformly across the board when assembling the final questionnaire to actually keep within the 40-page limit. Even then the format of the questionnaire would have been greatly improved by a further reduction of approximately 30 percent of the items included. Without a pretest it was not possible to make further reductions on methodological grounds.

At Northeastern Illinois a pretest questionnaire was administered to a small, non-probability sample of Sociology students enrolled in the same research methodology class from which the student/staff volunteers were recruited. The pretest was intended to indicate which questionnaire items "worked", which needed revision in format or wording, and which seemed to be ineffective in terms of eliciting a desired range of responses (or any responses). Although the pretest was coded, coding was primarily an exercise to introduce student/staff

to coding procedures, and the data was not processed further. Group coding sessions with the student/staff did allow for discussion of question wording and format. A number of questionnaire items were revised to improve clarity and readability as the result of these sessions. Student/staff did provide limited written comments and criticisms of the questionnaire and did submit a few additional items for inclusion on the final version.

At Chicago each student did a pretest of an intermediate version of the questionnaire and reported the results. Student/staff tried to get a variety of students for the pretest with respect to having withdrawn or planning to withdraw.

In brief, none of the studies were able to provide the resources for a valid pretest, but all attempted some field testing with relatively naive respondents.

3. Design of questionnaire. In terms of final format, the Northwestern survey was the most amateurish, the Chicago survey the most polished, and the Northeastern Illinois survey was intermediate between the former two. These differences resulted from conscious decisions made on the part of the authors rather than from a differential awareness of professional standards.

At Northwestern, while student/staff were filling out and critiquing each other's questionnaire segments, Suelzle prepared a listing of the number of questions compiled by each person or group. Budgetary constraints set the total length of the final questionnaire at forty pages. The student/staff as a group decided how many pages of the total would be allocated to each area and subgroup. Based upon the critiques and page limitations imposed, each group then decided which of their own items to include and which to eliminate. In cases of doubt they were encouraged to retain items which would be replica-

tions of previous studies. Student/staff in general perceived the procedure as fair, although they found it difficult to eliminate items which they had worked very hard to formulate. Suelzle and her research assistant took the responsibility for assembling the final copy of the questionnaire, electing to overcrowd the pages rather than eliminate any more items than necessary (hence the amateurish, crowded appearance of the Northwestern questionnaire). Even so, they ended up eliminating five pages of items to keep within the 40 page limit, and they did this uniformly by deleting items from each of the sub-interest areas. In other words, everyone was penalized equally in terms of items deleted. The two of them spent approximately 40 hours apiece on the layout of the final questionnaire. Items were eliminated primarily on the criterion of the extent to which they overlapped with others (since items had already been edited on technical grounds during group critiques). They did one final editing of the items to make sure the wording was clear, and also to make the format of the questions consistent (Likert scaling was utilized wherever feasible). At a class meeting, all student/staff were informed of the decisions made and the basis for those decisions. If student/staff wanted to challenge the decisions and include items which had been eliminated, they were given the option of doing so with the restriction imposed that they would have to indicate which items of comparable length they would eliminate instead. All of the student/staff were content with the decisions made, again perceiving the procedures as fair. Suelzle exercised no control over the substantive content of the items themselves.

In organizing the final questionnaire design, Suelzle was more concerned that the student/staff continue to perceive the questionnaire as "theirs" and the procedures as "fair" than she was in creating a "professional" instrument

in terms of appearance. Thus, she decided to accept overcrowded pages rather than eliminate substantial numbers of items. Suelzle judged (correctly as it turned out) that Northwestern undergraduate students were capable of answering a less-than-perfectly formatted questionnaire than would be the case for the general public. Some of the exams to which Northwestern students are subjected are run off on purple spirit masters and are truly atrocious in appearance and the spacing provided for answers! Suelzle's concern stemmed from her previous experience at Berkeley where a similar class worked for the entire Fall quarter on developing items (Kelley and Suelzle 1970). Then Kelley and Suelzle had spent the entire Christmas break assembling a "professional" appearing questionnaire. Some of the student/staff had been outraged that none of "their" items were on the questionnaire, and were quite hostile throughout the subsequent phases of data collection at Berkeley. At Northwestern, again Suelzle felt that she had made a judicious decision. The Northwestern student/staff remained highly committed to "their" questionnaire throughout the entire data collection process. A typist, without prior experience in questionnaire design was hired to type the final questionnaire from Suelzle's cut-and-paste final draft.

At Northeastern Illinois, Singleton took the responsibility for the final questionnaire preparation, typing and retyping drafts until a satisfactory final product was achieved. Approximately ten days, scheduling around other project activities and employment obligations, were required to complete the task of the final organization, layout and typing. In addition to concern for the substance of questionnaire items, preparing the final version of the survey instrument required attention to the mechanics of putting it together in a way that would provide readability for respondents, coders, and keypunchers. It was sometimes necessary to type and retype a page, experimenting with various

layouts and spacing in order to find the "best fit" for a series of questions. Efforts to include as many questionnaire items as possible, provide room for open-ended questions, provide data processing specifications, and produce relatively uncluttered pages required a great deal of cutting, pasting, shuffling and retyping.

At Chicago the questionnaire was divided into four or five general topics and small groups of students were formed to write questions on those topics. These questions were discussed in class sessions, with changes made by other groups. These questions were turned in to Rosenfeld and compiled by her over Spring break. After Spring break, she and the student/staff collectively went through the process of cutting down the size. Students with an interest in a particular question or questions were given consideration. The final decisions, however, were made at a series of meetings on Saturdays. Student/staff who did not come to the Saturday meetings and did not have a conflict due to other commitments (e.g., work), had to accept the decisions of those who did attend. Interested student/staff were thus included in the process of organizing the overall final questionnaire design format, whereas, at Northwestern and Northeastern Illinois, they were not. In general, all student/staff were satisfied with the results. Rosenfeld exercised a veto once, with respect to questions on sexual orientation. Although she understood the usefulness of such questions, she feared that the whole enterprise would be stopped if the administration saw those items. The administration had retained the right to approve or veto the final questionnaire at Chicago, whereas at Northwestern and Northeastern Illinois the administrations had not. At Chicago the general format of the questionnaire was improved by the comments of an NORC Senior Survey Director and by an NORC coding supervisor. NORC typists, thoroughly familiar with the design and layout of questionnaires, typed the final copy.

At Chicago, Rosenfeld's intervention came more at the midpoint of the project than at the end. The layout of the final questionnaire was to some degree the contribution of the Word Processing Center at NORC. They type many, many questionnaires and have learned how to space them, arrange columns, and other technical layout details. Rosenfeld could have insisted on a condensed format, but acted especially on the advice of data processing staff there not to try to save on space as in general too much data is lost. For example, in general respondents will skip more questions and fill in more response categories incorrectly when a questionnaire is too crowded, resulting in a higher incidence of missing data. It is revealing however, in comparing the three surveys to find that in general the proportion of valid responses was roughly equivalent at Chicago and Northwestern, i.e., on the most elegant and on the most cluttered of the three questionnaires. The proportion of missing data was much higher at Northeastern, where the questionnaire was more compressed than at Chicago but eminently readable. After mulling over this puzzling finding, the authors hypothesized that the relevant variable might simply be intelligence when surveys are being conducted with test-wise respondents enrolled in colleges.

Quality of printing of questionnaires at all three universities was uniformly high, multilithed on good quality bond and printed both sides.

At Northwestern, because of the accelerated schedule to conduct the project in a single quarter, collating and stapling had to be done by student/staff members. The questionnaire was printed on regular 8½"by 11" sheets which were laid out around long tables and all the project members walked around collating. Rather than being perceived as tedious drudgery, in general the student/staff thought this was fun. The entire job was completed in one

2-hour class session, and student/staff reported that this event finally gave them the feeling of working as an entire group. It will be remembered that up until that point they had been working on questionnaire design in small subgroups. Questionnaires were stapled in the upper left hand corner, and a cover letter and return postcard attached with a paper clip. A return envelope was also included in the packet mailed to respondents. One of the students brought a radio which provided music to work by. In retrospect it would have been a good idea to have provided some munchies as well for a mini-party to celebrate completion of the task. There was a general air of festivity surrounding the event, tension was relieved, the questionnaire was ready for mailing.

At Northeastern Illinois and Chicago the questionnaires were printed in booklet form, in covers, and stapled down the back. The booklets were returned assembled to the project members ready for mailing. At Northeastern Illinois school closings due to blizzard conditions caused a backlog of work in duplicating services, and a consequent delay of a week's time in the actual mailing. At Chicago, the questionnaires were printed and assembled by NORC, with the usual NORC covers.

4. Distribution and Return. At all three campuses administration of the questionnaires was handled by student/staff project members under the supervision of the principal investigators. The administrative tasks were easier at Northwestern and Chicago where questionnaires were both mailed out to respondents and returned by mail, more difficult at Northeastern Illinois where questionnaires were returned to campus drop boxes. The tasks involved were simplified still further at Chicago where envelopes printed with NORC's return address were available for the packets mailed to respondents, and printed/postage-paid envelopes also available for returns. Project members just had to stamp a project number on the back of the envelope with a hand stamp.

At Chicago, at the beginning of the spring (second) quarter, packets of materials were assembled by the students, and mailed from NORC. The survey packets consisted of a questionnaire, a letter of consent, and a self-addressed, stamped, return envelope. Daily tracking of returns was not possible because of the travel schedule of the principal investigator and the part-time nature of the research assistant's position. Returns were monitored by putting a second set of mailing labels on sheets of paper to form a list and marking off questionnaires as they were returned. A signed informed consent form returned with the questionnaires was used to identify which of the individuals in the sample had responded. While doing the mailings, the group did work past 6:00 p.m. one night. Since this meant that students living in the dorms (and this was most of them) missed supper, pizza was ordered and charged to the project.

At Northwestern, the division of labor holding each student/staff member accountable for 25 respondents in the sample was carried over into the administration of the questionnaires. Most of a class session (1½ hours), prior to the one in which the questionnaires were collated and stapled, was devoted to preparing envelopes and postcards for the survey packet. Each student/staff class member addressed the 25 envelopes for the respondents in their subsample. Since the Registrar's computerized listing only gave students' names and not addresses, addresses had to be looked up individually in a student directory which is compiled annually by the university and sold through the campus bookstore. Each envelope had to be stamped with a Department of Sociology return address, as did the envelopes used for returns. Postage had to be affixed to survey packets mailed to students living off-campus, and to their return envelopes; packets to respondents living on-campus were delivered by student/

staff class members and returned through campus mail. The packets were assembled at the end of the questionnaire collating session and separated into off-campus and on-campus piles for mailing or delivery. On-campus packets were further separated by residence hall. Student/staff members delivered all of the on-campus packets to the separate residence halls to be placed directly into the respondents' post office boxes by the residence hall person designated to handle mail sorting. By avoiding the use of campus mail and doing deliveries at least a day was gained in terms of respondents receiving their questionnaires.

At both Northwestern and Northeastern Illinois, returns were identified by a post card (created from 3x5 blank file cards) to be returned by respondents at the same time they returned their completed questionnaires, but separately from the questionnaires. One side of the card was stamped with the return address for the project; the other side was marked with a unique 4-digit number. The first two digits identified the student/staff member responsible for the individual in the subsample; the second two digits identified the individual in the subsample. On both campuses, more questionnaires than postcards were returned, suggesting that respondents were basically honest about not returning postcards unless they also returned questionnaires, but that the postcards were more easily lost than were the questionnaires.

Since Northeastern Illinois, while facing the same budget constraints as the Northwestern project, is a commuter campus, costs of postage had to be minimized in a different fashion. It was originally planned to distribute questionnaire booklets by delivering them to students selected for the sample in classrooms. It was anticipated that this method, though difficult, would be workable and that the personal contact made during delivery might have a positive effect on the response rate. However, the "delivery system" proved to be impractical for the following reasons:

1. Not enough students enrolled in thr project course to make 570 deliveries.

2. Weather during the time of questionnaire distribution--the blizzard of '79--prevented many students from attending classes and some cancelled their enrollment entirely for the winter trimester.

3. Another university-wide survey was being conducted by the administration during class time and it seemed likely that instructors would be opposed to any additional interruption for the sake of surveying even though interruption would be minimal.

Therefore, it was decided to mail survey packets 3rd class to students at their home addresses. The cover letter enclosed in the survey packets requested that respondents put the completed questionnaire in the envelope provided and return it and the numbered index card to pairs of drop boxes placed in four convenient locations on campus. They were asked to drop the questionnaire in one box and the index card in the other to enable tracking of returns while guaranteeing anonymity. Drop boxes were created by covering empty cardboard boxes with bright yellow paper and indentifying them with the project logo--"Survey'79." Project members made daily rounds of the drop box locations. Rate of return was tracked on a daily basis. Student/staff were provided with Retrieval Record sheets on which they logged in, by location, the 4-digit number of each index card returned and the total number of questionnaire booklets picked up each day. Retrieval of survey material from the drop boxes, as most other project activities, required project members to work independently and its success depended on their acceptance of responsibility. For the most part, it worked very well. However, one project member neglected to pick up material

on several occasions and did not fill out Retrieval Record sheets accurately. This negligence and error had minimal effect on retrieval activities and records since the project director monitored all activities daily. If a pick up was missed, someone was sent the same day or early the next morning to collect materials. Material collected was checked carefully against Retrieval Records and errors detected were corrected.

Publicity was quite minimal at the University of Chicago and Northwestern University, and quite extensive at Northeastern Illinois University. At Chicago a notice about the survey appeared in the campus paper in the spring quarter when the questionnaires were mailed. At Northwestern, two advance notices appeared about the survey: one three weeks before the survey was mailed in the Community Voice, a bi-weekly newsletter of a residential college which is widely distributed to faculty and administrators as well as student members; one two weeks before the survey was mailed in the campus daily newspaper.

At Northeastern Illinois the project was expanded from the single survey of undergraduate students to a multi-phased survey of campus clubs and organizations, and readers of the campus newspaper as well. A letter explaining the project's goals was sent to all (116) campus clubs and organizations. A brief questionnaire asking for information about the club was printed on the reverse side of the letter. The primary purpose of this letter-questionnaire was to acquaint student organizations with the project. However, it also provided an opportunity for input from the perspective of special interest groups.

A constant flow of publicity was produced preceeding and during data collection by articles in the Northeastern Illinois campus newspaper. Articles printed at the end of the Fall trimester and at the beginning of the Winter term, before the questionnaires were mailed, offered explanations of the research project. Weekly articles published during the second and third month of the Winter

term, entitled "SURVEY '79 UPDATE", provided up-to-date reviews of project activities, expressed appreciation for assistance from various individuals and organizations, and repeatedly encouraged students to complete and return questionnaire booklets. The objective of the publicity effort was to bring the project to the attention of as many members of the university community as possible and to maintain a general interest in it. It was hoped that if enough interest could be generated, the rate of returned questionnaire booklets would benefit.

Further publicity efforts included a series of weekly "mini" questionnaires published in the Northeastern Illinois campus newspaper. The questionnaires put forth frivolous inquiries, for example, "Is there a life after graduation? (1) I'm sure there is; (2) I certainly hope so; (3) I've heard conflicting reports; (4) I don't think I'll ever know.", as well as some of a serious, sometimes controversial nature. Again, the objective was to build interest and participation in the project in general. Readers were also invited to submit questions they would like to see included in forthcomming mini-questionnaires. Questionnaires were printed down the length of a page with a broken-line border so that readers could tear out completed questionnaires and deposit them in SURVEY '79 drop boxes. Mini-questionnaires were collected daily, along with other material left in drop boxes. Results were tabulated at the end of each week and published in the next week's edition of the paper. Results were reported as percentages rather than number of responses since it was expected that the actual number of respondents would not be impressive and an illusion of substantial participation was desired. Two questionnaire items, respondents' sex and classification (e.g. student, faculty, Civil Service) were included in each questionnaire to allow comparison of responses by group

for the sake of possibly generating competition. The project received maximum coverage in terms of space allocated in the campus newspaper in mid-March. Publicity efforts were then gradually reduced to enable greater attention on the part of project members to coding and editing questionnaire booklets that had been returned.

It had been anticipated that writing articles, mini-questionnaires, results of mini-questionnaires, and general publicity in the Northeastern Illinois campus newspaper would be ancillary activities undertaken by members of the research team or other volunteers. Initially, a journalism student (not part of the research team) offered to tabulate the results of the mini-questionnaires and to write articles based on the results. However, the student was unable to devote the time necessary to meeting press deadlines and seemed disinclined to have the articles reviewed by the project director prior to printing. Since meeting each deadline was imperative to maintain the flow of publicity and it was necessary that the content of the articles be consonant with the project's tenor, the project director assumed responsibility for publicity. Publicty efforts proved to be time-consuming and pressure-producing. In retrospect, it would have been desirable if a project member with writing experience had been given responsibility for publicity as their project assignment. Another problem which emerged was that a questionnaire regarding child care needs, of which the project director had no prior knowledge, appeared in the campus newspaper under a SURVEY '79 heading, i.e., with implied sponsorship but without appropriate authorization. An objection was sent to the organization involved as well as a memo to the newspaper to prevent a similar occurrence in the future. From the beginning, SURVEY '79 was identified as a student-initiated and student-sponsored effort. Therefore newspaper articles did not have by-lines

identifying the project director as the author, thus avoiding any implication that the project was other than student-sponsored.

5. Follow-ups. Time, money, and administrative constraints limited the intensity with which follow-ups could be pursued. At Northwestern it was possible for student/staff to conduct telephone follow-ups and for the principal investigator to mail a second survey packet to nonrespondents; telephone follow-ups were not permitted by the administrations at either Chicago or Northeastern Illinois. At Chicago, funding was available to mail second survey packets to nonrespondents; at Northeastern Illinois, funding was available only for post-card reminders. At Northwestern and Northeastern Illinois case contact record sheets were maintained to track returns of postcards; at Chicago I.D. numbers were placed on each questionnaire and used to mark off returns against the duplicate list of mailing labels retained.

At Northwestern, each student/staff member filled out a case contact record sheet at the time they drew their subsamples of 25 respondents each and assigned each case the unique 4-digit identification number. That number was entered on a sheet along with the information available from the computerized registration lists used for sampling: students' name, sex, ethnicity, major, and school (such as Journalism, Arts and Science, Education). Addresses and telephone numbers were added from the campus-wide student directory at the time mailing envelopes were prepared. The original questionnaires were mailed or delivered on the Thursday of the sixth week of the ten-week Winter quarter. Some were returned completed as early as the following day. After two weeks, at the end of the eighth week of the quarter, completed questionnaires had been received from 44 percent of the nonblack sample and from 18 percent of the black sample. At this point the principal investigator dropped an assignment which would have required student/staff members to write a brief data analysis

paper, and instead freed up their time for the last three to four weeks (two weeks of classes, reading week, and exam week) to work on improving the response rate by telephoning nonrespondents, as well as to code and keypunch returned questionnaires. Student/staff members shared with each other their lists of nonrespondents, and traded off telephone follow-ups where another project member knew a nonrespondent personally. They initialled names on each other's lists to avoid duplication of effort. On the case contact record sheets, student/staff members recorded date, time and result of actual and attempted contacts, and the outcome. By the end of the quarter the response rate had been increased to 54 percent for the nonblack sample and 25 percent for the black sample. On the last day of scheduled classes a group discussion centered on techniques which seemed to be effective for eliciting agreement to complete questionnaires and which could therefore be used by others during reading and exam week. Suggestions included being firm and businesslike, not letting the respondents talk too much which seemed to provide more time for them to invent excuses, persistence, offering to pick up completed questionnaires personally, and emphasizing that it only took an hour to fill out the questionnaire which could provide a good break from studying for exams. Suelzle emphasized that if every student/staff member for the nonblack sample was able to get "just two more respondents" then a response rate of 67 percent could be attained. This gave class members a more realistic definition of "success" than the former stress on striving for an almost 100 percent return rate. It was a sucessful strategy insofar as nonblack student/staff members also offered to help the six black members try to improve their response rates which were much lower. Students reported that respondents were more willing to complete questionnaires

when they identified themselves by name and especially if the respondent knew the person calling. In retrospect, it would have been a good idea to include the names of student/staff members on the cover letter in the survey packets, which was not done originally. In a further attempt to increase the response rate, a follow-up packet was sent out at the beginning of the Spring quarter by the principal investigator and her research assistant. Different cover letters were designed for the black and nonblack follow-up packets and the names of student/staff members were included on those cover letters. In general, the success of the telephone follow-ups could be inferred to be a function of the competence and involvement of individual student/staff members. Student/staff members who had higher response rates were also more accurate in coding and key-punching case contact record sheets and questionnaires.

At Chicago, survey packets were mailed at the end of the third and beginning of the fourth weeks of the ten-week Spring quarter. A followup letter with a second survey packet was sent during the fifth and sixth weeks. Since student/staff members were not to know the names of the students surveyed, students in the sample could not be contacted directly. Project funding did not permit the hiring of others (for example a graduate student) to do so. The follow-up did bring in a new wave of questionnaires. The followup packet was expensive in terms of cash outlay, but worthwhile in terms of improving response rate since the telephone follow-ups were precluded.

At Northeastern Illinois, it had been planned that nonrespondents would be contacted by telephone follow-ups. There is neither a published student directory nor is there a master list of telephone numbers maintained by the university. Telephone numbers are available only on individual enrollment forms filled out by students each term which are retained by the Registration Office. Although student/staff members were prepared to undertake the time-consuming task of looking up telephone numbers from individual registration forms, permission to

do so was denied by the Registration Office. The rationale offered was that students might object to being contacted by telephone and the university did not want to be involved in any activity that might be considered an invasion of privacy. Further instructions were given not to contact students by telephone even if numbers could be obtained from another source. In fact, student/staff members had already obtained about 20 percent of the telephone numbers needed by matching last names and addresses on the case contact record sheets with those in public telephone directories. As an alternative to telephone contact, follow-up postcards were sent.

At Northeastern Illinois the severe budgetary constraints meant postcards were used to follow-up because they could be sent at a much lower cost than letters. Postcards were less expensive to print and to mail and did not require envelopes. The project director provided duplicating services with photo-ready copy on the front and back sides of the postcards. The cards were printed four-to-a-page and then cut. The bulk rate mail stamp was printed on the address side and "Return Postage Guaranteed" was printed under the return address. The "Return Postage Guaranteed" endorsement, which had not been included on the original mailing of survey packets, enabled identification of individuals who were nonrespondents because the mailing was undeliverable as addressed. Bulk rate mail did reduce out-of-pocket expenses but increased student/staff time expenditure since it requires putting the mailing into zip code order. The response rate did increase about five days after the postcards were mailed. A total of 61 questionnaires were received after the follow-up postcards were mailed. The postcards also identified and created additional problems. Several respondents returned the postcards with notes to the effect that they had returned the completed questionnaire but had lost or forgotten to return the original postcard

at the same time, or that there had been no postcard in the survey packet. One irrate student called to report that she had taken several hours to complete the questionnaire and had returned it along with the postcard as instructed. She suggested that project record-keeping needed considerable improvement and asked questions about the project's sponsorship. It was explained that the project involved complex procedures and record-keeping for hundreds of students and unfortunately some errors were made. She was assured that her participation was most appreciated and received an apology for being sent a follow-up postcard. Though it had been planned to begin follow-up activities two weeks after the original mailing of the survey packets, postcards were not actually sent until one month later. The delay was the result of unsuccessful negotiations for permission to look up telephone numbers and the additional time it took to arrange for an alternative method of follow-up.

6. Quality Control of Data Processing. Quality control of data processing traditionally includes verifying the accuracy of coding, keypunching, and data file preparation.

a. Coding. At all three universities, student/staff members were trained as coders and took the responsibility for coding questionnaires returned before the end of scheduled classes. At Northwestern, Suelzle and her research assistant assumed the responsibility for check-coding all questionnaires as well as coding those returned late; at Northeastern Illinois student/staff members traded questionnaires for an initial check-coding with a final check conducted by the project director; at Chicago supervision was turned over to NORC data processing personnel.

At Northwestern the first two questionnaires were returned the day after

the questionnaires were mailed out, at the end of the 6th week of the 10-week quarter. On the Saturday, Suelzle and her research assistant each coded and keypunched one of these questionnaires with the total time taken being about one hour each; this time included resolving questions about coding procedures and making notes of potential problems. During the 7th week of the quarter they conducted a general overview of coding procedures during the first 2-hour class session and during the second went over a prepared handout concerning coding procedures. In addition, they handed out copies of the SPSS program which would be used to create the data file. (Since student/staff worked with disc and tape files in the Fall quarter, many still did not quite understand how the data got from a questionnaire to a data file; the philosophy operationalized was that the more they understood the entire process and how the quality of data set depended on each of the intervening steps--response rate, coding, keypunching---the higher would be the quality of work they would do at each stage.) Only the closed-ended questions were coded and keypunched at this time. The class as a whole developed a code for students' major field of study (working from a code developed for the University of California at Berkeley with modifications as necessary for Northwestern) and this was then typed up and handed out separately the following week. Questionnaires were edge coded. By the end of the last class of the quarter each student had been assigned 12 questionnaires for coding and keypunching (252 out of the 325 completed questionnaires finally returned). Open-ended questions were coded and Keypunched during the following academic year by students who enrolled in the introductory research methodology class that year. This provided an opportunity for a second group of students to gain on-the-job experience in data processing.

At Northeastern Illinois, codes were specified by Singleton using values established for the Northwestern study whenever applicable. Each project member was given a blank questionnaire booklet. Codebook preparation sessions were held during which coding schemes were reviewed and project members prepared their own codebooks by entering codes in blank questionnaire booklets. This method of codebook preparation was more time-consuming than duplicating a master codebook, but did eliminate additional printing costs and permitted discussion and clarification of coding procedures. Furthermore, because the survey was printed in booklet format, it was compact and convenient to use as a codebook and provided coding references matched page-to-page with questionnaires to be coded. Coding began as questionnaires were returned. Project members "checked out" questionnaire booklets on Coding Record sheets, which were retained by the principal investigator. "Checking out" questionnaire booklets for coding was necessary because project members' schedules prevented them from spending prolonged periods of time on campus and because they could not work in a common area without interrupting, or being interrupted by, other students or instructors who used the facility. Project members checked out as many booklets as they thought they could code in several days' time. Although precautions were taken to insure the safety of project materials and to record the whereabouts of questionnaire booklets at all times, allowing the booklets to be taken from a common area and/or open access to the common area for other students resulted in the loss of two booklets.

Booklets were edge-coded in pencil by project members. Using pencil proved to be useful since at least one project member continually made gross errors in coding. Errors were erased by checkers and correct codes entered clearly which improved readability for keypunchers. Instructions were given to "flag" problematic items with a small piece of paper paperclipped to the page on which the item

appeared. Many coders provided brief comments suggesting a solution to the coding problem or their interpretation of the respondent's answer. To provide feedback for coding problems and to point out errors made repetitiously, the project director wrote comments on flags and returned them to coders. Coding notes to supplement codebooks were written by the project director. The coding of each booklet was checked first by a project member and a second time by the project director who made ultimate editing decisions. It was not until coding was actually underway that the need for several changes in coding schemes became apparent. Even when coding instructions were simplified, coding errors were made since coders had become accustomed to the original pattern. Errors that were overlooked during checking and editing were identified during computer runs for out-of-range codes and consistency checks.

Questionnaires returned during the quarter at the University of Chicago were coded by a subset of the students, on Saturdays and in the evening, under the direction of an NORC coding supervisor. He drew up the coding specifications and kept a check on the accuracy of the coding. He himself coded the questionnaires which came in late.

b. Keypunching. At Northeastern Illinois and Chicago the data were contracted out for keypunching; at Northeastern Illinois by University Computer Services as part of university support services and therefore not billed to the project, and at Chicago by NORC personnel. At Chicago the data were cleaned by the coding supervisor, continuing the reliance on NORC data processing. At Northeastern Illinois out-of-range and contingency checking was conducted by Singleton.

Time constraints at the end of the data collection period made it impossible

or difficult for student/staff to keypunch, but at Northwestern an attempt was made to do so, with the principal investigator and research assistant being responsible for work remaining to be completed following the end of the quarter. At Northwestern students keypunched the case contact record sheets and coded questionnaires for which they were responsible. The research assistant manually verified all keypunching, which was expensive since it occupied a good deal of her time during the Spring quarter following completion of the course sequence. It was not anticipated that all keypunching would have to be manually verified; initially only spot-checking at random was planned. However, student/staff members varied widely in terms of quality, from those who did a professional calibre job to those who turned in work of such substandard quality that it was virtually useless. The student/staff members did know it was the end of the quarter and there would not be time to check out their work before grades were assigned. Thus, turning in the right number of keypunched cards unfortunately became defined as good enough to complete project responsibilities for some as they faced final examinations and term papers due in their other courses as well. Most student/staff fell somewhere between the two extremes with two or three keypunching errors per card, too high to be tolerated for reliable future use of the data. Unless there is time for student/staff to switch questionnaires and have them keypunched twice for checking, or unless a verifying machine is available, our experience indicates that it is definitely worthwhile subcontracting keypunching to a data processing firm or center who will verify.

c. Data file preparation. At Northwestern Suelzle wrote the SPSS program used to create the data file. Copies were handed out to the student/staff members to inform them of the procedures employed. At Northeastern Illinois, Singleton similarly wrote the SPSS program using acronyms established for the

Northwestern sutdy where applicable. At Chicago student/staff members participated in creating the acronyms. Suelzle and Singleton created their own data tapes, including checking and editing with computer runs for out-of-range codes and consistency checks. NORC personnel created, checked and edited the Chicago tape.

At all three universities, quality control of data processing was meticulously handled by the project directors at least in part because the quality of work by student/staff was known to be conducted under the usual pressures at the end of academic sessions. As a result of the compulsiveness of the quality control of data processing all three studies probably surpass usual standards of accuracy for large-scale projects.

Performance Measures

Typically, performance in conducting a survey research project is measured by response rate and staff performance. Classroom performance is measured by students' motivation and satisfaction as well as grades (See Figure 4).

Figure 4 About Here

1. Response Rate. Response rate was highest at Northwestern University where there were personal telephone follow-up contacts as well as a second survey packet sent to nonrespondents, intermediate at the University of Chicago where second survey packets were sent to nonrespondents, and lowest at Northeastern Illinois where there was a postcard reminder follow-up augmented by extensive publicity in the campus newspaper. At Northwestern and Chicago students could

return completed questionnaires by mail which was undoubtedly more convenient for many than having to return them to a limited number of campus drop boxes which was the case at Northeastern Illinois. On the basis of this data, we would offer the generalization that the more personalized the contact, the higher the response rate.

At Northwestern, after the personal telephone follow-ups in the Winter quarter, and the mail follow-up in the Spring quarter, a 66.1 percent response rate (248 out of 375 questionnaires returned) was obtained for the non-black subsample, a 51.3 percent response rate (77 out of 150 questionnaires returned) for the black subsample. There was a positive grade skew for the respondents compared to the distribution of GPA's campus-wide, suggesting that the bias introduced by the nonresponses was towards completion of questionnaires by students with higher GPA's. That is, students who were more conscientious/ compulsive about academic performance, or perhaps just more intellectually gifted, were more likely to return questionnaires.

At the University of Chicago a 58 percent response rate was obtained for currently enrolled students, a 35 percent response rate for the subsample of withdrawn students. At Northeastern Illinois the response rate was 40 percent.

2. Student motivation and satisfaction. A final consideration which affects performance is whether or not students are "paid" for their efforts. None of the student researchers at Northwestern, Northeastern Illinois, or Chicago received monetary compensation; however, all received academic credit. At Northeastern Illinois, some project responsibilities were initially delegated to a student who, though not enrolled to receive credit for project participation, did express great interest in the venture and asked to be included in project activities. Genuine and substantial interest not withstanding, the student's

other commitments eventually preempted project assignments requiring that the student researchers (enrolled for credit) and the project director assume the "volunteer's" responsibilities. It is suggested that reliance on voluntaristic student power is generally unwise. Offering some type of compensation which carries with it at least a minimum obligation is more prudent. A further benefit of credit hour compensation is that it allows project activities to become an integral part of a student's academic life rather than an extra curricular activity which is always in danger of having to be put aside for more pressing scholastic endeavors.

At Northwestern, staff performance, as measured by the quality of work, was high as long as it could be monitored closely and feedback provided, i.e., through design of the instrument, selection of the sample, mailing of the survey packets, and telephone follow-ups. Quality suffered during the last three weeks of the quarter when time demands became pressing and classes were cancelled to permit student/staff time for telephone follow-ups, coding, and keypunching. A contributing factor to the decline in quality was the shift in procedures as completed questionnaires were returned. Instead of keeping student/staff responsible for their 25 respondents, questionnaires were sequentially numbered in order of receipt and handed out on a rotational basis to student/staff for coding and keypunching. The idea of being responsible for those 25 respondents was diluted. In retrospect it would have been better from the outset to tell each student/staff member that when 17 out of their 25 respondents had returned questionnaires (67%) then they would be done with their follow-ups, and when they had coded and keypunched 17 questionnaires (or some fraction thereof) then they would be done with the course. It seems reasonable to assume this procedure would have encouraged them to respond more quickly in finishing their

quotas rather than just holding them to the ideal goal of continuing follow-ups and getting as many completed questionnaires as possible before the end of the quarter, preferably 100%.

At Northeastern Illinois, students remained enthusiastic about whatever had to be done as long as they were getting signals that what they did was necessary and important (as it indeed was). Students' most common question throughout the project was, "Is there anything else I can do?" Grading was not an issue as the instructor of the research methodology course contracted to give all students the letter grade of "A" for competent performance of survey task assignments.

At Chicago, it was difficult to get students to show up for work which had to be done outside scheduled class hours. For example, coding had to be done after hours under the supervision of the NORC supervisor. Coding ended up being done by a smaller core of committed students, as was the case for other tasks when there was this extraordinary demand.

Discussion and Recommendations

Three separate experiments demonstrate that large-scale mail survey questionnaire design and data collection can be incorporated into introductory undergraduate research methodology courses. The quality of the data depends upon the adequacy of resources (especially funding for supplies and postage), the degree to which the locus of control is shared by the principal investigator with the funding source and student/staff, and maintenance of accountability standards.

This type of experiential learning does create role strains for the person

initiating the project, between the research role of principal investigator and the academic role of instructor. University funding agencies can become gate-keepers, imposing more stipulations and retaining more sanctions than would generally be the case. When student/staff become co-participants they too exert proprietory rights over content. The initiator of the project, acting as both principal investigator and instructor, must be prepared to surrender some decision-making power and legitimacy to sanction. The process requires more of an instructor's time than would be required for the usual lecture plus laboratory format, and more of a principal investigator's time than would be required when trained research staff could be hired for different positions. All three projects required at least one academic session beyond the time scheduled in order to achieve professional standards for data quality control. On the other hand all three of the project initiators were naive and perhaps overly ambitious. With the benefit of hindsight a number of recommendations can be offered to expedite the process for subsequent efforts.

1. Recognize and accept that it is impossible to teach everything in one academic term or even an entire academic year. At least two terms are probably necessary, an entire year optimal.

2. Recognize and accept that it is necessary to leave student/staff members out of participation in some steps of the research process and to reduce their decision-making power in other steps. Plan to provide adequate explanations as to why these omissions are necessary and adequate feedback on the parts missed. For example, obtaining funding, questionnaire layout, and setting up a computer (SPSS) file are essentially 1-or-2 person operations.

3. Recognize and accept that the more highly structured the course (the greater the division of labor and more highly defined the task allocation),

the shorter will be the amount of time required to conduct a large-scale mail questionnaire survey. Courses could be more highly structured by: (a) replicating items which saves time and enables greater comparability to other studies; (b) imposing a topic; and (c) restricting the number of questions by, for example, having each student submit "X" questions on a specified topic.

4. Require at least one prior statistics course based on survey research techniques as a prerequisite for course enrollment. It is difficult to explain to a novice why all the technical rules are important for later analysis without the previous experience of analyzing someone else's data. For example, making categories mutually exclusive and exhaustive, and not asking leading or biased questions, seem intuitively obvious, but require an experiential base to put into practice. Payne's Art of Asking Questions (1951) is better read after the fact as a critique than as a how-to-do-it handbook.

5. Pretest the questionnaire. It is difficult to get the feel for asking a question, for understanding how it will be read by someone else.

6. Over the years use alternative methodologies (participant observation, depth interviewing) to investigate the same theme of "undergraduate life" and build up files of student papers.

7. Case out support and opposition at particular campuses. Experienced faculty are better, with good working relationships pre-established, if bartering for goods and services becomes necessary.

With respect to scheduling, we offer the somewhat tongue-in-cheek summary:

Murphy's Law: Nothing is as easy as it looks. Everything takes longer than you think. Whatever can go wrong will.

First Corollary to Murphy's Law: The validity of Murphy's Law is demonstrated

in inverse proportion to the amount of funding, planning, support services, and extent, training and experience of personnel involved in any survey research project.

Second Corollary to Murphy's Law: Demonstration of the principles of Murphy's Law will be improved by unfavorable acts of God (who has no sympathy for survey researchers).

Table 1. Out-of-pocket costs for three university survey research projects*

	Northwestern University	Northeastern Illinois University	University of Chicago
Common Expenses			
Duplicating: printing and Xeroxing	$ 352	$ 247	$ 333
Supplies	93	58	171
Postage	333	239	750
Subtotals	$ 778	$ 544	$1254
Unique Expenses			
Typing	$ 200	---	$ 200
Data processing: keypunching, coding, data file preparation	1975	---	2355
Computerized literature searches	315	---	---
Grand Totals	$3268	$ 544	$ 3809

*None of the projects incurred out-of-pocket expenses for principal investigator salaries or computing funds.

Figure 1. Organizational hierarchies for funded survey research projects and for academic instruction

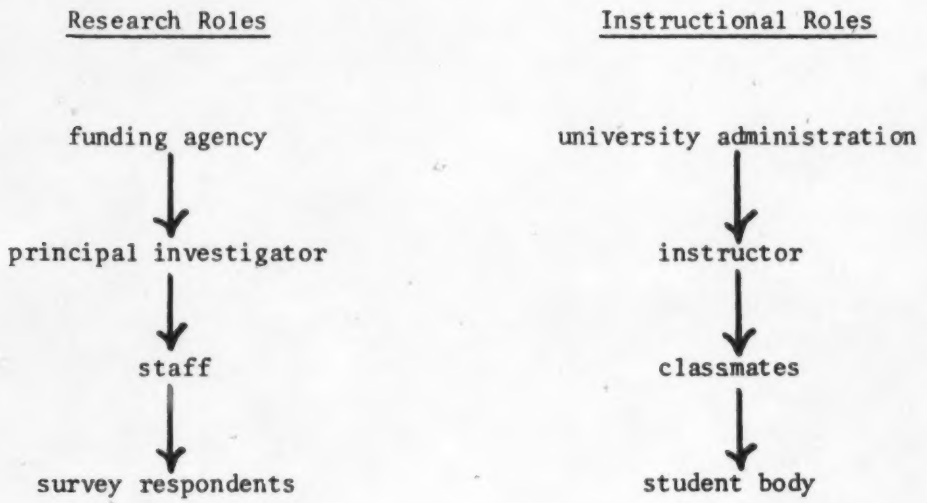
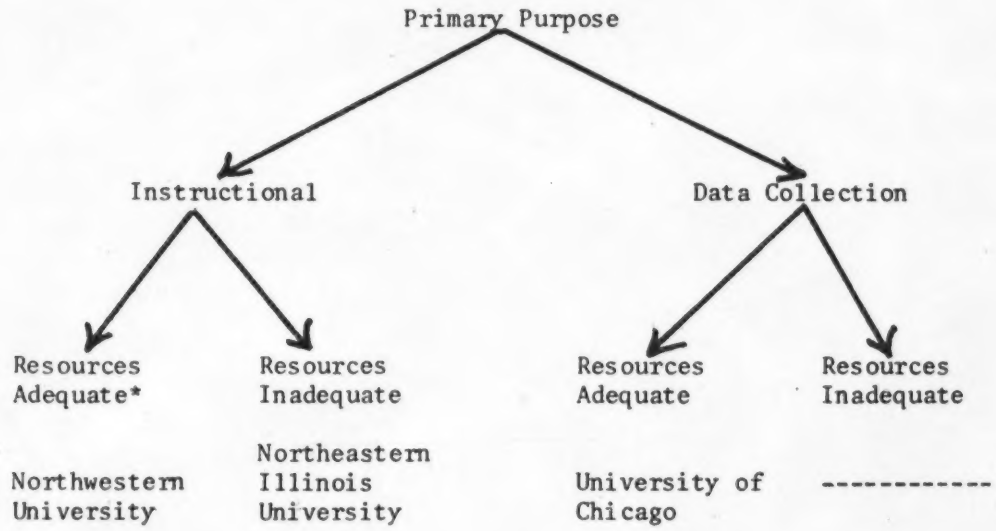


Figure 2. Taxonomy of the situational structuring of three university survey research projects



*Resource adequacy is based on a global evaluation of the adequacy of time, funding, and staff skills for conducting the projects. Of the three resources, funding is the most critical.

Figure 3. Maintenance of professional accountability standards by three university research projects

	Northwestern University	Northeastern Illinois University	University of Chicago
Sampling	Maintained	Maintained	Maintained
Pretest	Compromised[1]	Compromised[1]	Compromised[1]
Design of questionnaire	Compromised[2]	Maintained	Maintained
Questionnaire distribution and return	Maintained	Compromised[3]	Maintained
Follow-ups	Maintained	Compromised[4]	Compromised[4]
Quality control of data processing	Maintained	Maintained	Maintained

[1]Compromised due to time constraints

[2]Compromised due to principal investigator sharing control over questionnaire content with student/staff

[3]Compromised due to inadequate funding

[4]Compromised due to unviersity administration retaining control over access to student body as respondents

Figure 4. Performance measures of adequacy of survey research procedures and perceived instructional benefits in three university research projects

	Northwestern University	Northeastern Illinois University	University of Chicago
Response rate	Adequate	Inadequate	Borderline Adequate
Student motivation and satisfaction	Adequate	Adequate	Adequate